Wisconsin Health Facts: Racial and Ethnic Disparities in Infant Mortality

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Elimination of health disparities constitutes an overarching goal of the state health plan, *Healthiest Wisconsin 2010*. Perhaps the most disturbing health disparity in Wisconsin is the persistent high death rate of infants born to African American women. Infants born to African American women in Wisconsin have been 3-4 times more likely to die before their first birthday than infants born to white women. Further, during the past 20 years, virtually no decline has occurred in Wisconsin's African American infant mortality rate. Compared to white infant mortality, disparities also exist among American Indian, Laotian/Hmong and Hispanic populations, although disparities are smaller than those of African Americans.

Infant mortality rates (the number of deaths during the first year of life per 1,000 live births in a population group) reflect a tragic loss of life to individuals, families, and the community. The magnitude of infant mortality also reflects broader social and economic conditions that affect maternal and infant health, including factors such as access to high-quality health care, education, poverty, and racism.

In 2004, 420 Wisconsin infants died during the first year of life. Of these, 245 were white, and 125 were African American (Table 1). The white infant mortality rate of 4.5 deaths per 1,000 live births in Wisconsin met the national *Healthy People 2010* objective for the first time in 2004. In contrast, infant mortality rates for Wisconsin racial/ethnic minority populations have not met this objective; the African American infant mortality rate was 19.2. The disparity ratio of African American to white infant mortality rates was 4.3, meaning an infant born to an African American woman was 4.3 times more likely to die before reaching its first birthday than an infant born to a white woman. If African American infant mortality were reduced to the white infant mortality level, 96 of the 125 deaths would have been prevented.

Table 1. Number of Infant Deaths and Births by Race/Ethnicity, Wisconsin, 2004[1]

	African American	American Indian	Hispanic	Laotian/ Hmong	White	Other/ Missing	All Race/Ethnicity
Infant Deaths	125	6	30	9	245	5	420
Births	6,497	1,034	5,915	1,045	54,217	1,423	70,131

Table 2 presents three-year infant mortality rates for the 2002-2004 period. Combining years provides more stability in rates with relatively few events in a single year, such as Laotian/Hmong and American Indian infant deaths. For each racial/ethnic minority group in Wisconsin, the 2002-2004 infant death rate exceeded that of whites. The infant mortality rate of American Indians was 1.8 times greater than the white rate; the rate for Laotian/Hmong was 1.6 times the white rate. In comparison to all groups, the risk of death during the first year of life was greatest for African Americans.

Table 2. Infant Mortality Rates and Disparity Ratios by Race/Ethnicity, Wisconsin, 2002-2004[1]

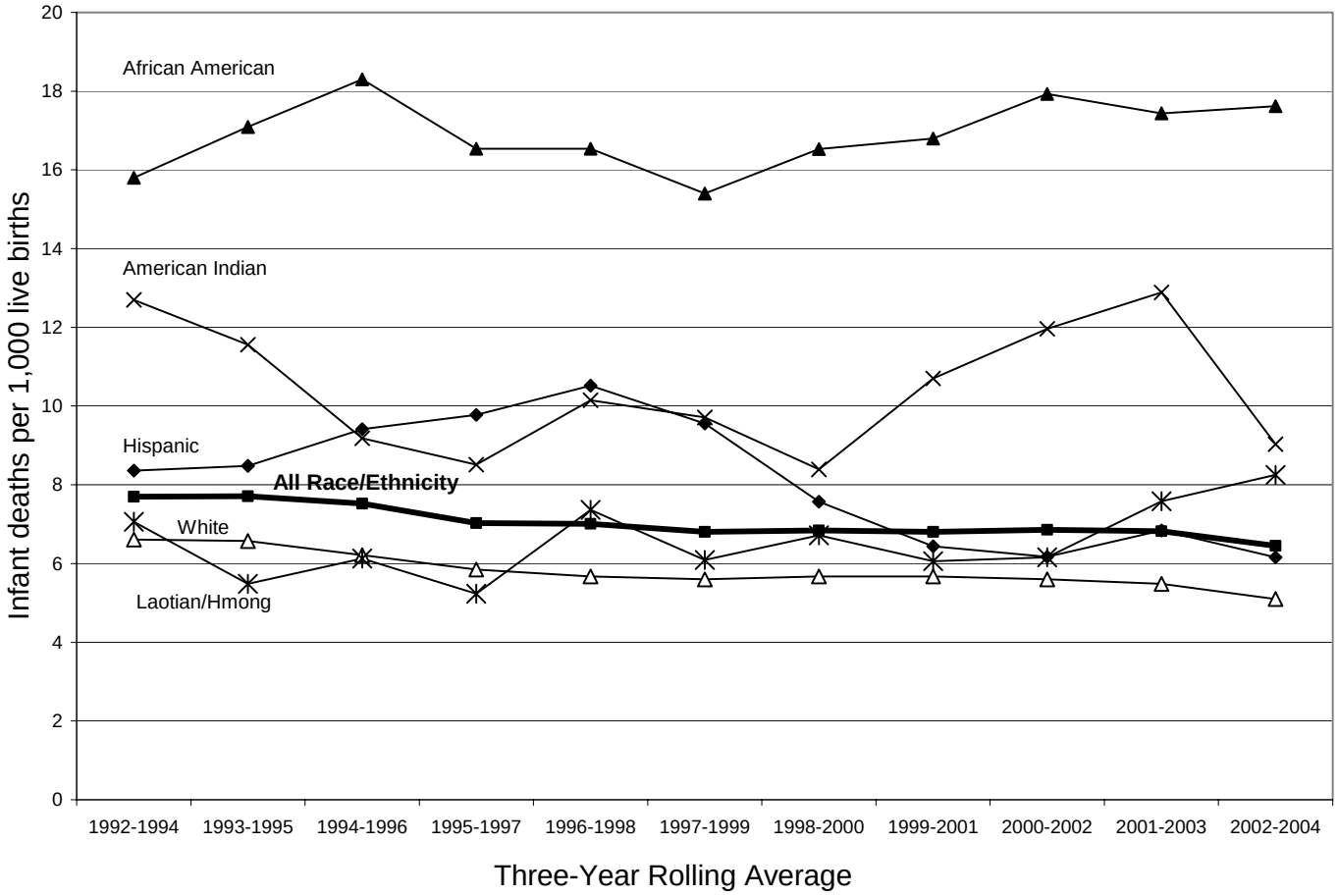
	African American	American Indian	Hispanic	Laotian/ Hmong	White	Other/ Missing	All Race/Ethnicity
Infant Mortality Rate	17.6	9.0	6.2	8.3	5.1	5.2	6.5
95% Confidence Interval	15.8 - 19.5	5.6 – 12.4	5.0 - 7.3	5.0 - 11.5	4.8 - 5.4	3.0 - 7.5	6.1 - 6.8
Disparity Ratio*	3.5	1.8	1.2	1.6	1.0	1.0	1.3

* The disparity ratio is the infant mortality rate for a specified group divided by the white rate.

Historical Trends Identify Persistent Gaps

Wisconsin's infant mortality rates demonstrate enduring racial and ethnic disparities from 1992-1994 to 2002-2004 (Figure A). Although the overall infant mortality rate declined, these gains did not extend to minority groups. Based on three-year rolling averages, the overall infant mortality rate declined from 7.7 to 6.4 deaths per 1,000 live births. Declines in infant mortality rates also occurred among Hispanics and whites, but not among African American, American Indian, and Laotian/Hmong populations.

Figure A. Infant Mortality Rates by Race/Ethnicity, Wisconsin, 1992-1994 to 2002-2004[1]



Infant Mortality Rank Relative to Other States

Relative to other reporting states and the District of Columbia, Wisconsin's infant mortality ranking has fallen since 1979-1981 (Table 3). In 1979-1981, relative to other ranked states, Wisconsin had the third lowest African American infant mortality rate. For the 2000-2002 period, Wisconsin ranked 40th out of reporting states and the District of Columbia, indicating it had the highest African American infant mortality rate. Since 1979-1981, Wisconsin's rank based on white infant mortality rates has also declined relative to other states, moving from a rank of 5 in 1979-1981 to 21 in 2000-2002. Thus, while Wisconsin's white infant mortality rate declined during the past two decades, improvement did not keep pace with many other states.

Table 3. Wisconsin's Rank Relative to Reporting States Based on Infant Mortality Rates, 1979-81 and 2000-2002

Race	1979-1981[2]	2000-2002[3]
African American*	3 (34)	40 (40)
White	5 (51)	21 (50)**

* In 1979-1981, 33 states and the District of Columbia reported African American rates. In 2000-2002, six additional states reported African American rates. The number of reporting states is indicated in parentheses.

** For 2000-2002, the District of Columbia did not report a white infant mortality rate.

Causes of Death

Table 4 shows the proportion of infant deaths due to leading causes for the period 2002-2004. Among African Americans, leading causes included preterm and low birthweight (28.9%); Sudden Infant Death Syndrome or SIDS (13.0%); and congenital malformations/birth defects (12.4%). Among whites, the leading causes were congenital malformations/birth defects (22.1%); preterm and low birthweight (16.6%); and SIDS (9.4%). For several of the leading causes of infant mortality, it is possible to modify the underlying risk factors, such as preterm births, low birthweight, and unsafe sleep practices. Reductions in infant mortality can be achieved through improved access to high-quality health care, educational programs, and outreach interventions.

Table 4. Percent of Infant Deaths Due to Selected Leading Causes, Wisconsin, 2002-2004[1]

Cause of Death	All Race/Ethnicity	African American	White
Perinatal: Disorders related to Preterm Birth and Low Birthweight	20.9%	28.9%	16.6%
Congenital Malformations/Birth Defects	19.9%	12.4%	22.1%
Sudden Infant Death Syndrome (SIDS)	10.0%	13.0%	9.4%
Perinatal: Maternal Complications of Pregnancy	4.9%	5.9%	4.6%
Respiratory Distress of the Newborn	3.3%	3.2%	3.2%
Perinatal: Newborn Complications of Placenta/Cord/Membranes	2.8%	2.1%	3.2%

Selected Maternal Characteristics

Examples of maternal characteristics that affect infant mortality, such as age, education, the trimester that prenatal care is initiated, and smoking status, are presented in Table 5. In every category, the African American infant mortality rate exceeded the white infant mortality rate. Corresponding black/white disparity ratios ranged from 2.3 to 4.0.

Table 5. Infant Mortality Rates for Selected Maternal Characteristics by Race/Ethnicity, 2002-2004[1]

	All Race/Ethnicity	African American	White	Black/White Disparity Ratio
Age (years)				
Less than 20	11.9	21.0	8.7	2.4
20-29	6.4	17.1	4.9	3.5
30-39	5.1	14.4	4.6	3.1
40 +	6.8	*	6.3	*
Education				
Less than High School	10.0	19.5	8.3	2.3
High School Graduate	7.4	16.0	6.0	2.7
More than High School	4.6	15.7	4.0	4.0
Trimester Prenatal Care Began				
First	5.9	16.9	4.8	3.5
Second	6.9	14.8	5.3	2.8
Third or None	17.1	31.0	12.8	2.4
Smoking Status				
Smoked	9.3	23.4	7.4	3.2
Did not smoke	5.9	16.3	4.7	3.5

* Inadequate sample for rate calculation

Selected Infant Characteristics

Critical risk factors for an infant death presented in Table 6 include low birthweight (less than 2,500 grams, or about 5.5 pounds) and preterm birth (birth before 37 weeks of gestation). Although the race disparity is less for infants born with very low birthweight (less than 1,500 grams), all very low birthweight infants are at substantial risk. However, a greater proportion of infants born to African American women than those born to white women are low birthweight or preterm. Thus, both the higher rates of infant mortality at low birthweight and the greater proportion of low birthweight infants born to African American women contribute to the disparity in infant mortality. In the period 2002-2004, about 75 percent of African American infant deaths occurred among low birthweight infants compared with two-thirds of white infant deaths.

Table 6. Infant Mortality Rates and Number of Infant Deaths for Selected Infant Characteristics by Race/Ethnicity, 2002-2004[1]

	All Race/Ethnicity	African American	White	Black/White Disparity Ratio
Birthweight				
Very low (less than 1500g)	273.5 (722)	329.2 (210)	251.1 (419)	1.3
Low (1500g-2499g)	16.5 (191)	20.2 (40)	14.9 (122)	1.4
Normal (2500g and above)	2.1 (417)	5.3 (88)	1.8 (276)	2.9
Gestational Age				
Preterm	39.4 (897)	76.3 (249)	32.0 (533)	2.4
Full term	2.4 (443)	5.6 (89)	2.0 (294)	2.8
Postpartum Stage				
Neonatal (<28 days)	4.4 (913)	11.4 (220)	3.5 (569)	3.3
Postneonatal (28-365 days)	2.1 (432)	6.2 (119)	1.6 (262)	3.8

Summary and Conclusions

Despite declines in Wisconsin's overall infant mortality rate during the past decade, declines did not occur for many racial/ethnic groups, and disparities have persisted. Disparity is greatest among African Americans, and this disparity has increased. Relative to other states, Wisconsin's rank based on African American infant mortality has fallen from among the best rates in the country to the worst. Factors associated with preterm birth and low birthweight constitute the leading cause of death for infants born to African American women.

The Department of Health and Family Services is strengthening efforts to improve the maternal and child health of Wisconsin's racial/ethnic minority populations. A five-year strategic plan to eliminate racial/ethnic disparities will be disseminated in the spring of 2006. The Department will target expansion of tobacco cessation treatment to pregnant and post-partum mothers, expansion of home visiting, expansion of access to alcohol and substance abuse treatment for pregnant women, improvements in prenatal care coordination services, improvements in consumer health literacy about safe sleep environments, and improvements in health professionals' knowledge and use of evidence-based, culturally competent treatment approaches. The Governor's new policy initiative, *BadgerCare Plus,* would assure access to affordable health insurance for all Wisconsin children and many more pregnant women through creation of a single health care safety net program that merges the family Medical Assistance, BadgerCare and Healthy Start Programs. Through partnership and collaboration with affected communities, and engagement of key stakeholders, we will reach our Healthiest Wisconsin 2010 goal.

References

[1] Wisconsin Department of Health and Family Services, Division of Public Health, Bureau of Health Information and Policy. Wisconsin Interactive Statistics on Health (WISH) data query system, http://dhfs.wisconsin.gov/wish/. Birth Counts Module, accessed 12/07/05. Race/ethnicity is based on self-reported race of the mother. Race groups exclude persons of Hispanic origin; an individual identified as Hispanic may be of any race.

[2] Kvale, et al. *Wis. Med J.* 2004;103(5):42-47.

[3] NCHS. *Health, United States, 2004. With Chartbook on Trends in the Health of Americans*. Hyattsville, Maryland:2004.